WHAT IS CLAIMED IS:

1. A display driver apparatus for driving a display comprising a plurality of pixels, each of which is located at a respective one of a plurality of intersections formed between one of a plurality of common electrodes and one of a plurality of segment electrodes, wherein an orientation state of an electro-optical material of each pixel is controlled by a voltage applied to it, the display driver apparatus comprising:

a common electrode drive device that supplies a scanning signal for simultaneously selecting L common electrodes, where L is a natural number and L $\geqq 2$;

a segment electrode drive device that supplies a data signal to each of the plurality of segment electrodes;

a storage medium from which N-bit display data are simultaneously read out for each of the plurality of segment electrodes; and

a decoder having a plurality of sub-decoders and that divides the N-bit display data simultaneously read out from the storage medium into (N/L)-bit data units, decodes the (N/L)-bit data units, and outputs a voltage to be applied to each of the segment electrodes;

wherein

in a first mode, the N-bit display data provides 2^A display gradients for each of L pixels on each of the segment electrodes, where $A = (N/L) \geqq 2$, and an output voltage is output from a selected one of the sub-decoders in each of A divided periods of one horizontal scanning period, and

in a second mode, the N-bit display data provides 2^B display gradients for each of $n \times L$ pixels on each of the segment electrodes, where $1 \leqq B = A/n$ and $n \geqq 2$, and an output voltage is output from a selected one of the sub-decoders every n horizontal scanning periods.

2. A display driver apparatus according to claim 1, further comprising a terminal that selects one of the first mode and the second mode.

3. A display driver apparatus according to claim 1, further comprising an interface circuit for inputting the N-bit display data from an external source, wherein a mode selection signal for selecting one of the first mode and the second mode is input through the interface circuit.

4. A display driver apparatus according to claim 1, wherein in the first mode the N-bit display data provides four display gradients for each of L pixels on each of the segment electrodes.

5. A display driver apparatus according to claim 4, wherein in the second mode the N-bit display data provides two display gradients for each of 2L pixels on each of the segment electrodes.

6. An electro-optical device comprising a display driver apparatus according to claim 1.

7. An electronic device comprising an electro-optical device according to claim 6.

8. A method for driving a display comprising a plurality of pixels, each of which is located at a respective one of a plurality of intersections formed between one of a plurality of common electrodes and one of a plurality of segment electrodes, wherein an orientation state of an electro-optical material of each pixel is controlled by a voltage applied to it, the display driving method comprising the steps of:

a common electrode drive device that supplies a scanning signal for simultaneously selecting L common electrodes, where L is a natural number and $L \geqq 2$;

supplying a data signal to each of the plurality of segment electrodes;

simultaneously reading N-bit display data for each of the plurality of segment electrodes; and

dividing each read N-bit display data into (N/L)-bit units, decoding the (N/L)-bit data units, and output a voltage to be applied to each of the segment electrodes;

wherein

in a first mode, the N-bit display data provides 2^A display gradients for each of L pixels on each of the segment electrodes, where $A = (N/L) \geqq 2$, and an output voltage is output in each of A divided periods of one horizontal scanning period, and

in a second mode, the N-bit display data provides 2^B display gradients for each of $n \times L$ pixels on each of the segment electrodes, where $1 \leqq B = A/n$ and $n \geqq 2$, and an output voltage is output every n horizontal scanning periods.

9. A display driving method according to claim 8, further comprising the steps of inputting the N-bit display data from an external source, and inputting a mode selection signal for selecting one of the first mode and the second mode from an external source.

10. A display driving method according to claim 8, wherein in the first mode the N-bit display data provides four display gradients for each of L pixels on each of the segment electrodes.

11. A display driving method according to claim 10, wherein in the second mode the N-bit display data provides two display gradients for each of 2L pixels on each of the segment electrodes.